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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,973	08/17/2001	Yosuke Yamada	10417-091001 / F51-137504	5424
26211	7590	03/22/2005	EXAMINER	
FISH & RICHARDSON P.C. CITIGROUP CENTER 52ND FLOOR 153 EAST 53RD STREET NEW YORK, NY 10022-4611			MENON, KRISHNAN S	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/931,973

Applicant(s)

YAMADA, YOSUKE

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,4,5,7,9-11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4,5,7,9-11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 2,4,5,7,9-11 and 13-17 are pending after the preliminary amendment of 2/22/05.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,4,5,7, 9-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-060074 in view of Zha (US 6,156,200) and JP-04-110023 A.

Claims 2 and 14: JP-07-060074 teaches a filter device comprising a filter cylinder, plurality of hollow fiber membranes having a bundled end, and a free end spread in the fluid (see fig 1), injection means for injecting fluid and gas to the plurality of hollow fibers (4 - lumen side, 1-outside the lumen, fig 1) to agitate the hollow fibers.

JP-74 does not teach means for injecting fluid and gas at the center portion of the hollow fibers to outwardly radiate the fluid and gas other than through the lumen of the hollow fibers. Zha teaches injecting liquid and gas under pressure to the center of the bundle of fibers through a porous pipe from the bottom of the vessel to outwardly radiate for agitating the fibers (see fig 5 and 6; abstract, and col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching

of Zha in the teaching of JP-74 for introducing liquid and gas to the center of the bundle for proper distribution of liquid or gas for improved agitation of the hollow fibers.

Re the funnel chamber beneath the hollow fibers, JP-074 has the funnel arrangement. Re the recovery chamber underneath the funnel chamber, JP-074 and Zha does not teach such a chamber, even though Zha teaches draining the tank in Fig 5. JP-023 teaches hanging bundles of hollow fibers with bubbling gas, and baffles (similar to the funnel) arranged to separate the particulates released by the gas scrubbing. There is a chamber for collecting the sediments underneath the baffles. See figure 2: baffles 11,12,13 and 27. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of JP-023 in the teaching of JP- 074 and Zha to protect the hollow fibers from the released coarse particulates as taught by JP-023 (see abstract).

The floating bubbles spreading the fibers (into a broom form – as in claim 14) and removing the deposits is inherent in the device. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d, 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

Re the limitation cylinder ID 1.5 to 3 times the hollow fiber bundle ID, which JP-74 in view of Zha does not specifically teach, it would be obvious to one of ordinary skill in the art at the time of invention to provide a cylinder ID sufficient to have sufficient volume capacity for the process fluid flow and free movement of the fibers inside the cylinder. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Aller, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955).

Independent Claim 4 add further limitations of a funnel member in the bottom as in claim 4 (see fig 1). Deposits precipitating in the funnel is inherent— In re Best and In re King.

Claim 5 : recovery chamber adapted to recover – see JP-023

Independent Claim 7 adds the further limitation of a backwash chamber for storing filtrate and for providing fluid for backwash (see 5, fig 1 of JP-74), and the filter as vertically disposed, in addition to the limitations of claim 5. Both JP-74 and Zha references teach the back-flush using filtrate. However, filtrate pressurized to flow into the plurality of fibers ... is inherent function of the device – IN re King.

Claim 9 and 10 add further limitations over claims 2, 5 or 7 as follows: the injection pipe penetrating the bottom surface of the cylinder in claim 9; it extends 1/3 to 2/3 through the height of the bundle in claim 10. JP-74 does not teach an injection pipe. Zha teaches the injection pipe (see fig 5 and pipe 16, fig 6). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the

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teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers because the injection pipe penetrates from the bottom and to a distance  $2/3$  of the bundle.

Claim 11 adds the further limitation over claims 2,4,5 and 7 of injecting raw fluid and air through the injection pipe, which is not taught by JP-74. Zha teaches injecting air and fluid through the injection pipe (abstract; col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers by injecting fluid and air.

Independent Claim 13 recites the method of cleaning a filter using the apparatus described in claim 1. JP-07-060074 in view of Zha (US 6,156,200) and JP-023 teaches all the limitations of the claim including injecting fluid and gas for cleaning the membrane – see rejection of claim 2 above.

Claims 15 and 16: JP-074 in view of Zha and JP-023 teaches the funnel/baffle having a lower end opening, and injection means positioned to pass through the recovery chamber and opening of the baffles. See figures in Zha and JP-023.

Claim 17: Valved pipe outlet for the recovery chamber – see fig 2 of JP-023.

### ***Response to Arguments***

Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

This is in response to the RCE and supplementary amendment of 2/22/05. This action is made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon  
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